



UNITED STATES PATENT AND TRADEMARK OFFICE

AL

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/199,447	11/25/1998	YASUNOBU FUJITA	XA-8993	3708

7590

01/06/2004

Mitchell W. Shapiro
Miles & Stockbridge P.C.
1751 Pinnacle Drive
Suite 500
McLean, VA 22102

EXAMINER

JOHNSON, JERRY D

ART UNIT

PAPER NUMBER

1764

DATE MAILED: 01/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/199,447

Applicant(s)

FUJITA ET AL.

Examiner

Jerry D. Johnson

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 6) ☐ Other: _____

Art Unit: 1764

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraishi et al.

Shiraishi et al., U.S. Patent 5,656,582, teach a rust preventive lubricating oil which prevents bearings from rusting without adversely affecting various characteristics of bearings such as torque, sound and life (column 1, lines 5-9). Shiraishi et al. teach that conventional rust preventive lubricating oils generally have a viscosity of about $120\text{--}500\text{ mm}^2\cdot\text{S}^{-1}/40^\circ\text{C}$. (column 1, lines 10-14). The rust preventive oil contains a rust-preventive agent and a base oil as essential components. This base oil must contain an ether oil (column 1, lines 57-60). Viscosity of the ether oil per se and ether oil-containing mixtures used as a base oil is usually $10\text{--}100\text{ mm}^2/\text{s}$ @ 40°C (column 3, lines 8-11). If the viscosity is lower than $10\text{ mm}^2\cdot\text{S}^{-1}/40^\circ\text{C}$., increase in the endurance of bearings cannot be expected. If it is more than $100\text{ mm}^2\cdot\text{S}^{-1}/40^\circ\text{C}$., the action to inhibit generation of cage sound is insufficient (column 3, lines 11-14). In comparative example 11; Table 4 of Shiraishi et al., a composition comprising a mineral base oil having a viscosity of $120\text{ mm}^2\cdot\text{S}^{-1}/40^\circ\text{C}$ is disclosed. The rust preventive lubricating oil can contain an oiliness improver together with the rust-preventive agent and the base oil. The oiliness improver further improves lubricating performances such as wear resistance. The oiliness improvers include, for example, higher alcohols, carboxylic acids such as oleic acid, amines such as stearylamine, organomolybdenum compounds such as molybdenum dithiophosphate, phosphate esters such as

Art Unit: 1764

tricresyl phosphate, phosphor-based and sulfur-based additives and mixtures of them such as a mixture of oleic acid and tricresyl phosphate . (Column 3, lines 15-26). The rust preventive lubricating oils are suitably used for bearings provided with an outer ring having an outer ring raceway track on its inner periphery, an inner ring having an inner raceway track on its outer periphery, a plurality of balls provided between the outer ring track and the inner ring track and a cage which holds the balls so that they can freely roll, especially small bearings such as sealed ball bearings (column 4, lines 7-14).

While Shiraishi et al. differ from the instant claims in not specifically disclosing a lubricating oil containing an extreme pressure agent and a corrosion preventing agent, the oiliness improvers of Shiraishi et al. include the instantly claimed extreme pressure agents and corrosion preventing agents. Furthermore, while Shiraishi et al. teach that when the base oil has a viscosity of more than $100 \text{ mm}^2 \cdot \text{S}^{-1} / 40^\circ \text{C}$., “the action to inhibit generation of cage sound is insufficient,” it would have been obvious to one having ordinary skill in the art to use a base oil having a viscosity greater than $100 \text{ mm}^2 \cdot \text{S}^{-1} / 40^\circ \text{C}$ if a lesser inhibited generation of cage sound is acceptable. Accordingly, applicants roller bearing would have been obvious to one having ordinary skill in the art at the time the invention was made as being encompassed by the teachings of Shiraishi et al.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraishi et al. as applied to claims 1 and 12-14 above, and further in view of Suzuki et al.

Shiraishi et al. is relied on as cited above, but differs from claim 15 in not disclosing molybdenum dithiocarbamate as a suitable oiliness additive.

Art Unit: 1764

Suzuki et al., U.S. Patent 5,640,769, is relied on as teaching roller bearing as taught by Shiraishi et al wherein said roller bearing contains a lubricating oil composition comprising an oiliness agent. The oiliness agents include, *inter alia*, organomolybdenum compounds such as molybdenum dithiocarbamate and molybdenum dithiophosphate (column 8, lines 46-56).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use molybdenum dithiocarbamate as the oiliness agent in a lubricating oil for a bearing as taught by Shiraishi et al. because Shiraishi et al. teach that organomolybdenum compounds such as molybdenum dithiophosphate may be used as oiliness agents and Suzuki et al. teach the equivalent use of molybdenum dithiophosphates and molybdenum dithiocarbamates in bearing oil compositions.

Claims 2-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraishi et al. and Suzuki et al. as applied to claims 1 and 12-15 above, and further in view of Noguchi et al. and Dunfield et al.

Shiraishi et al. and Suzuki et al. are relied on as cited above but differ from the instant claims in not disclosing that the inner and outer races are made of steel and the roller bearings are made of ceramics or "super-hard" alloy.

Noguchi et al., U.S. Patent 5,882,122, teach that ball bearings made of ceramic or a hard metal. having a surface hardness of Hv 950-Hv 1,800 (column 9, lines 34-38).

Dunfield et al., U.S. Patent 5,844,748, teach that ball bearings typically having inner and outer races made of steel (column 2, lines 5-6). Ceramic bearing balls are taught in column 8, line 43 to column 9, line 27.

Art Unit: 1764

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the rust preventive lubricating oil as taught by Shiraishi et al. and Suzuki et al. in a roller bearing wherein said roller bearing has inner and outer races made of steel and bearing balls made of ceramic or "super-hard" alloy as taught by Noguchi et al. and Dunfield et al.

Applicant's arguments filed September 25, 2003 have been fully considered but they are not persuasive.

Applicants argue

Shiraishi fails to teach any specific composition having both an oiliness improver (which the Office equates with Applicants' claimed extreme pressure agent) and a dynamic viscosity of at least $120 \text{ mm}^2/\text{s}$ at 40°C . As noted in the Amendment dated January 16, 2003, the only specific examples containing an oiliness improver in Shiraishi all use base oils having a viscosity in the range of 17-20 mm^2/s (see examples 11-16, and note also comparative examples 3-4). This is nowhere close to the viscosity range set forth in Applicants' Claim 1 and, if anything, would lead one away from the use of Shiraishi's oiliness improver in compositions with oil viscosities in Applicants claimed range. (REMARKS, pages 6 and 7).

Applicants' argument lacks merit.

The disclosure of Shiraishi et al. is not limited to the specific examples. Shiraishi et al. teach that the viscosity of the base oil "is usually $10\text{-}100 \text{ mm}^2 \cdot \text{S}^{-1}/40^\circ \text{C}$. If the viscosity is lower than $10 \text{ mm}^2 \cdot \text{S}^{-1}/40^\circ \text{C}$., increase in the endurance of bearings cannot be expected. If it is more than $100 \text{ mm}^2 \cdot \text{S}^{-1}/40^\circ \text{C}$., the action of inhibit generation of cage sound is insufficient" (column 3, lines 8-14; emphasis added). Accordingly, Shiraishi et al. do teach lubricating compositions, howbeit less desirable compositions wherein the viscosity is greater than $100 \text{ mm}^2 \cdot \text{S}^{-1}/40^\circ \text{C}$.

Applicants argue

Art Unit: 1764

Applicants' invention provides a highly effective solution to the problem of fretting corrosion in grease-filled spindle support bearings, a problem that Shiraishi does not even address (REMARKS, page 7).

Applicants' argument lacks merit.

In response to applicant's argument that Shiraishi et al does not address applicants' problem, the fact that applicants have recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

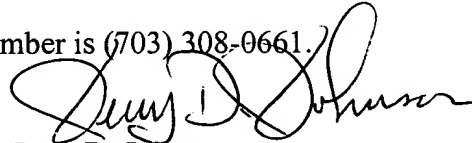
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry D. Johnson whose telephone number is (571) 272-1448. The examiner can normally be reached on 6:00-3:30, M-F, alternate Fridays off.

Art Unit: 1764

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glen Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to read "Jerry D. Johnson", is written over the printed name and title.

Jerry D. Johnson
Primary Examiner
Art Unit 1764

JDJ